

## **REMARKS**

Reconsideration of the instant application is respectfully requested in view of the amendments of the claims and the following remarks. This Amendment is in response to the final Office Action mailed November 9, 2010. Applicants respectfully request withdrawal of all pending rejections and issuance of a Notice of Allowance.

### **I. Status of the Claims**

Claims 1-43 are pending. This Amendment is in response to the final Office Action mailed November 9, 2010. Claims 1-3 are examined and rejected while the remaining claims are withdrawn from consideration. Claims 1-3 have been amended. Support for this amendment appears in the specification, for example at paragraphs [0075]-[0079] and [0081]-[0082].

### **II. Rejection based on §102(b)**

The Examiner rejects Claims 1-3 as allegedly being anticipated by Beninati *et al.* (FEBS Letter, 437:34-38, 1998). According to the Examiner, the antibody disclosed by the Beninati *et al.* recognizes the hypusine containing eIF5A.

Applicants respectfully submit that Beninati *et al.* fail to anticipate the presently claimed invention. The claims as amended are directed towards antibodies and antigen binding fragments that specifically bind to a hypusine containing form of eIF5a. Beninati *et al.* do not disclose an antibody that specifically binds to the hypusine containing form of eIF5a.

The three forms of eIF5A are:

- the protein as expressed from its cognate transcript, containing a lysine at position 50 [“lysyl eIF5A” or “eIF5A(Lys)”];
- the protein after completion of the butyl amine transfer from spermidine, containing a deoxyhypusine moiety at position 50 [“deoxyhypysyl intermediate” or “eIF5A(Dhp)”]; and
- the protein after completion of the oxygen-utilizing hydroxylation, containing a hypusine moiety at position 50 [“mature eIF5A” or “eIF5A(Hpu)”].

By juxtaposing, in Fig. 1 of Beninati *et al.*, radioactive labeling for hypusine formation vs. immunologic labeling for eIF5A synthesis, one with ordinary skill in the art would conclude that the Beninati *et al.* antibody does not bind to the hypusine containing form of eIF5a, according to the last paragraph of section 3.1 of their Results:

“The data showed an about 30% decrease of the intensity of the eIF5A band [*Comment: as measured via Western with their antibody*] ... that did **not** account for corresponding changes in hypusine synthesis [*Comment: as measured with metabolic labeling*]” (p. 36; bolded for emphasis).

Beninati *et al.* do not further distinguish the specificity of their antibody for any one of the three forms of eIF5a. One with ordinary skill in the art would conclude that the antibody disclosed by Beninati *et al.* lacks specificity for the hypusine containing form of eIF5A because Beninati *et al.* concede that their antibody revealed a “decrease of the intensity of the eIF5A band ... that did not account for corresponding changes in hypusine synthesis” (Section 3.1 of Results, p.36). Accordingly, Beninati *et al.* do not teach every element of the claims, and thus this reference fails to anticipate the present invention. In view of the foregoing remarks, withdrawal of the rejection under 35 U.S.C. § 102(a), as based on Beninati *et al.*, is respectfully requested.

The Examiner rejects Claim 1 as allegedly being anticipated by Xu *et al.*, (Journal of Biological Chemistry, 2001, Vol. 276, pages 2555-2561). According to the examiner, Xu *et al.* teach that the RNA disclosed binds to the hypusine region of eIF5A. In the sole interest of moving this case forward, Applicants amended claim 1 so that RNA is not covered by claim 1. Xu *et al.* does not teach every element of the claims, and thus fails to anticipate the present invention. In view of the foregoing remarks, withdrawal of the rejection under 35 U.S.C. § 102(a) is respectfully requested.

### **CONCLUSION**

In view of the foregoing remarks and amendments, it is respectfully submitted that the present application is in condition for allowance. Favorable reconsideration and allowance of all examined claims are earnestly solicited.

Respectfully Solicited,

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